LESSON PLAN

**Subject:** Mathematics  **Name:** Jamie Loud

**Grade Level:** 8-9th **Title:** Multiplying Binomials with FOIL

**Next Generation Sunshine State Standards:**

**Goal 3 Standard #3: Numeric Problem Solvers**

MA.912.A.3.2 Identify and apply the distributive, associative, and commutative properties of real numbers and the properties of equality

MA.912.A.4.2 Add, subtract, and multiply polynomials

**(1) Unit:** Using Distributive Properties to Simplify Algebraic Expressions

**(2) Rationale:** The FOIL method is an easy way to remember how to multiply binomials. Knowing how to simplify algebraic expressions through using this method is a foundational skill for higher mathematics. These skills are necessary for defining polynomial functions, which appear in a variety of real life settings including chemistry, physics, economics, social science, and calculus.

**(5) Goals/Objective:** Students will learn how to multiply two binomial expressions using the FOIL method, a distributive property.

**(5) Content (Outline):**

I. Terms

A. Polynomial, Binomial, Coefficient

II. Multiplying Binomials

1. Use Distributive Properties

III. FOIL Method

1. Multiply the first terms, outside terms, inside terms, and last terms

IV. Examples

1. (x+3)(x+2) = x²+2x+3x+6 = x²+5x+6

**(5) Procedures:**

**1. Anticipatory Set:**

Warm up problems are posted on the board reviewing the previous day’s lesson and are to be done by the students as they arrive. After a few minutes have students volunteer to come to the board and show how they solved each problem.

**2. Objective:**

Tell the students that today’s lesson is multiplying binomials using the FOIL method.

**3. Input:**

* Review the anticipatory set.
* In the last lesson you learned how to use the distributive property to multiply a single term with every term inside the parenthesis. Today you will learn how to multiply two binomials using the FOIL Method.
* Terms:
  + Polynomial: a term or sum of terms which has non-negative exponents only (x²+3x-6)
  + Binomial: a polynomial with two terms (x+4)
  + Coefficient: the number in front of the variable
* Explain the FOIL method using the poster with the formula on it.
* FOIL Method: When multiplying two binomials, multiply the **F**irst terms, then the **O**utside terms, then the **I**nside terms, and finally the **L**ast terms.

**4. Model:**

* Use FOIL method in Example: (x+3)(x+4)
  + First Terms: x\*x = x²
  + Outside Terms: x\*4 = 4x
  + Inside Terms: 3\*x = 3x
  + Last Terms: 3\*4 = 12
  + (x+3)(x+4) = x²+4x+3x+12 = x²+7x+12

**5. Check for Understanding:**

* Do another two examples questioning students throughout the process and observing how they work through the problems.
* Review the terms discussed at the beginning of the lesson.

**6. Guided Practice:**

* Have students break off into pairs and solve the problems on the attached worksheet working together with their partner. Remind them to use the FOIL method and show their work.
* Go around the room helping students and observing their efforts.
* Give praise to correct methods and positive reinforcement to those who are struggling.

**7. Independent Practice:**

Assign students homework problems from the book and have them complete the assignment before the next class meeting.

**(1) Resources:**

* Whiteboard, markers
* Poster board with formula
* Worksheets

**(2) Evaluation:** Each student will complete the assigned homework and will correctly solve the problems with 100% accuracy.

**(1) ESOL Strategies/ESE Modifications:** Illustrations, Small Groups, & Identify Main Ideas and Vocabulary